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ABSTRACT

In July of 1983, the state of Tennessee initiated The Healthy Children Initiative (HCI), a program designed to protect the health of Tennessee's children. Originally planned as a 4-year initiative, participating programs have been established on an ongoing basis. The first year's goal for Fiscal Year 83-84 was to make sure prenatal care was available for every pregnant woman in Tennessee. Another major area of emphasis has been the prevention of teenage pregnancies. The second and third years of the initiative concentrate on Infant Follow-Up (IFU), a program designed to insure that all babies receive developmental services and to establish networks between agencies and the private medical communities. This presentation describes the Infant Follow-Up Program designed for the Mid-Cumberland Region, an area consisting of 12 counties surrounding but not including the city of Nashville. The third year of the Healthy Children Initiative, which began July 1, 1985, focuses on expanding the Infant Follow-Up efforts to include a High Risk Registry to assure that infants with certain risk factors are identified systematically and followed with especially intensive efforts. Data indicate that the Follow-Up Program works: children have been assigned "medical homes," their immunization rate is better, and the medical communities are pleased. (RH)

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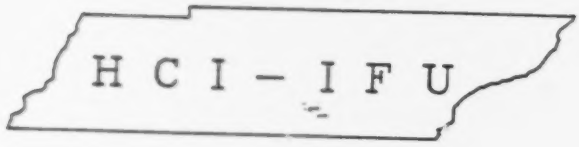

INFANT FOLLOW-UP SERVICES OFFERED by THE TENNESSEE DEPARTMENT of HEALTH and ENVIRONMENT

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In July of 1983 The State of Tennessee initiated a program designed to protect and promote the health of our children. This Program is called the Healthy Children Initiative and was established under the direction of our Governor - LAMAR ALEXANDER. Our first lady - HONEY ALEXANDER - is the chairperson of the Governor's Task Force on Healthy Children and has actively participated in activities designed to make this Initiative work.

The major goals of the Healthy Children Initiative are:

1. to have children born as healthy as possible, and
2. to keep them healthy.

The Tennessee Department of Health and Environment is the State Department charged with overseeing the Program, but participation by other state agencies and departments and the private sector is the reason the Initiative is working so well. The Departments of Education, Human Services, Mental Health and Retardation and The Tennessee Children's Services Commission have all developed and carried out activities designed to support the goal of healthier children in Tennessee.

The Tennessee Chapter of the American Academy of Pediatrics has worked to recruit doctors to serve as Medical Homes for children not receiving Private Medical Care. A Medical Home is defined as a place where a child goes consistently for total medical care. Ideally a Medical Home is a personal physician who knows the child, his past medical history and who has developed rapport with the child and his family. To date over 400 physicians across the state

are participating in our Medical Home program.

While the Project Planners had originally called it a 4 year initiative - the programs have been established to be ongong. Each year a program is added without deleting prior established ones.

The first year's goal for Fiscal Year 83/84 was to make sure prenatal care was available for every pregnant woman in Tennessee. Today access to prenatal care is available in all our 95 counties and 75% of these counties offer Maximum Level Care including:

comprehensive health screening and physical assessment
prenatal medical management
extensive patient counseling and education, and
formal linkage with the private sector.

Not only are we providing access to prenatal care, we strongly advocate the need for early entry into care. Last year over half of the 14,000 women receiving prenatal care through health department programs began care during their first trimester of pregnancy.

Another major area of emphesis has been the prevention of teenage pregnancies. A major campaign was designed by the Public Affairs Office of the Department of Health and Environment and titled "Get the Facts". This campaign enhanced the one designed by the American College of Obstitricians and Gynecologists.

The Second and Third years of our Initiative revolve around a

program titled Infant Follow-Up. Prior to July 1, 1984, when Infant Follow-Up began, each of the 13 regions in the Department of Health and Environment submitted proposals for establishing an Infant Follow-Up Program appropriate for their populations. The State of Tennessee, like all other states, has communities varying from extremely rural to highly urban. A single program designed by the State Agency would not work for all locations.

The Infant Follow-Up Program I will describe throughout the majority of this presentation is the one designed for the Mid-Cumberland Region -- an area consisting of 12 counties surrounding but not including the city of Nashville. Five of the state's 10 fastest growing counties are in this Region which currently has a population in excess of 500,000. The Region has a predominantly white population with a non-white population of only 7.8%. There are 12 other regions in the Department, 5 of which are metropolitan areas and the remaining 7 are considered rural.

The State Office did require certain areas be addressed when the RFP was released. These areas included:

1. target population with projected numbers
2. program objectives
3. services to be provided
4. staffing patterns

and 5. process for evaluation.

The Mid-Cumberland Region responded with the following:

The general format is one which consists of home visits designed to complement the routine and sick care provided by private practicing doctors. Because Health Departments are not open 24 hours/day or 7 days/week, we consider a Medical Home cannot be adequately provided by Health Department clinicians.

The Target population of infants we consider appropriate for our Infant Follow-Up Program consists of:

1. children born to mothers who participated in our prenatal programs
2. babies who were in our Regional Perinatal Center
3. Any infant referred to us by private or public service providers,
4. Babies at risk for delay using the following criteria,

   Birthweigt less than 2000 grams

   Mother's age less than 18 years at time of baby's birth

   Babies with physical anomolies noted at birth or shortly after.

The risk factors for delay were selected because they are easily obtained from the Tennessee Certificate of Live Birth.

Our mode of operation is defined by a standard home visit schedule. The first visit is made within 2 weeks after determining the baby might be eligible for the program. The next 3 standard visits are scheduled when the baby is 6, 15 and 21 months of age. More

frequent visits are scheduled if problems are noted or if the nurse determines they are needed. There are some babies who receive weekly home visits by Infant Follow-Up Nurses.

At present we are able to follow babies only until their second birthday. Those babies who have problems and who are discharged from Infant Follow-up at age 2 are are referred to other sources for continued follow-up.

In order to determine how the babies are doing certain areas of development are monitored on a regular basis. Assessments of the following core areas are made:

physical status
development
social and environmental status including
family support systems
hearing
vision
and financial support systems

When problems are noted appropriate referrals are made either within in the Health Department or to other medical or social providers.

In the Mid-Cumberland Region we perform an environmental/social assessment at the time of the first home vist and each time a move or change in family status occurs. This assessment is kept in the child's central folder and in many instances a copy is sent to the

baby's Medical Home Provider. The physicians have been quite pleased with this type of information since they no longer have the luxury of making home visits. Some doctors were not aware we have homes in our region without running water or cooking stoves.

The major goal of Infant Follow-Up is to see all our babies receive what they need to develop properly. This cannot be accomplished without the total cooperation of both the private and public sectors. By working together we can make sure our babies do well. The Mid-Cumberland Region has been pleased with the networks established with our private medical communities. In late September, 1984 we sent letters to all private practicing pediatricians, general practice and family practice physicians in the area who see chidren. The letter explained the program and each doctor was asked to return a form if he were not interested in participating in the Program or acting as a Medical Home for children we found who were not already established in one. Of the 125 doctors contacted only 7 returned the forms indicating they preferred not to participate. None of the returned forms were from pediatricians. Five of the doctors stated they were no longer accepting new patients in anticipation of retiring. Only 2 doctors requested non-participation. We interpret this positive response as a form of linking private and public medicine. In fact the entire Healthy Children Initiative has met with support by the Tennessee Medical Community.

You may have already noted, I have not described any financial

guidelines or restrictions for children enrolled in the Infant Follow-Up Program. There are none. This means the health department which has historically worked with lower income families is daring to work with moderate or better income families. One of our concerns was financially stable families would not wish service from the local health department. This has not been the case. One of our mothers was contacted when it was learned her new baby had a birth defect requiring some medical intervention. The mother, a free-lance news reporter, became so interested in the program she wrote an article which appeared in the special interest section of one of Nashville's newspapers. The baby is doing quite nicely these days and our Infant Follow-Up nurse visits the family periodically to perform developmental assessments.

The third year of the Healthy Children Initiative which began July 1, 1985, focuses on expanding the Infant Follow-Up efforts to include a High Risk Registry. The Registry Program has been designed to assure infants born across the state with certain risk factors are identified systematically and followed with especially intensive efforts.

The initial 3 risk indicators selected for this fiscal year are:

1. Birthweight less than 1500 grams
2. Family history of Childhood hearing loss
3. Low 5 minute APGAR score of:

   5 or less for babies weighing 2000 grams or more or

   3 or less for babies weighing less than 2000 grams.

These risk indicators can be easily obtained from the Tennessee Certificate of Live Birth.

At least monthly, birth certificates are reviewed in the local health departments. If a birth certificate indicates one or more of the risk indicators, the parents are contacted and the registry system is explained to them. If the parents agree and the Medical Home provider agrees the child is entered into the High Risk Registry System. In Tennessee the routing of the birth certificate is from the place of birth to the health department in the county of birth, which is not always the county of residence. The Registrar then sends the certificate to the State office of Vital Statistics for processing and Vital Statistics sends a copy to the local health department of the county of residence. Because of this system it is sometimes 60 to 90 days before the county of residence sees the certificate to determine if the child needs Infant Follow-Up or High Risk Registry Services. An informal system of early identification has been established so a referral is made from county of birth to county of residence as soon as it is noted on any birth certificate a child needs follow-up services. This sharing of information decreases the time of initial contact sometimes by as much as 3 months.

With the conceptual framework described I would like to report what we have accomplished in the first 12 months of Infant Follow-Up in the Mid-Cumberland Region.

With the money available we were able to hire 8 part-time Infant Follow-Up Nurses for our 12 counties. We opted for 8 part-time nurses rather than 4 full-time nurses because of the amount of territory covered by our region. By selecting nurses in each of the larger communities we were able to minimize the amount of time spent in travel, thus maximizing the amount of time spent in home visiting. The first nurse began work on July 1, 1984 - the first day of our fiscal year. The 8th nurse began work 4 months later.

We had anticipatd a target population of 750 infants and at the end of the first year had enrolled 823 children. For reporting requirements to the state office the children were devided into 3 categories:

children who had spent time in the Regional Perinatal Center
children diagnosed with chronic or crippling conditions, and
children at risk or those referred by other service providers.

In the Mid-Cumberland Region we had:

48 Perinatal Center Graduates
58 children diagnosed with chronic or crippling conditions and
717 children at risk or referred.

As the year went on we had more and more referrals. Examples of referral sources are:

private practicing doctors
Human Services Case Workers
Other Health Department Programs such as EPSDT and WIC

and

Mothers, whose infants were enrolled in the program, have referred other families.

During the first year of operation 88 babies were discharged from the follow-up program. The majority - 67 - of the babies moved from the region. When families moved out of the region but remained in the State they were referred to the appropriate Region's Infant Follow-up Program for continued support.

We at present, have no in-house computer capability for tracking children or planning follow-up. A tracking system using tickler cards was instituted so these cards could be filed chronologically according to the next needed visit or service. The cards are checked at least weekly so home visit schedules can be arranged and current status of each child can be determined.

During Fiscal Year 84/85 the nurses made 1744 home visits with countless numbers of attempted home visits. Not all families in the rural areas have telephones so appointment scheduling is sometimes difficult. Infant Follow-Up children also made 1219 visits to the health departments, mostly for immunizations.

After the first 12 months of Infant Follow-up a Record Review was performed on 177 children's records to determine adherence to Child

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Health Standards and adherence to Infant Follow-Up program requiremens. These records represented 22% of those children enrolled in the program during that year. Immunization Status was considered very important, not only because children recieve their shots, but because they also receive periodic physical assessments in a timely fashion. Adherence to Tennessee's Child Health Standards was strict. If a child were overdue for an immunization on the date of review he was considered delinquent. There was no grace period.

Of those records reviewed 119 children or 67% were completely immunized according to age. Sixteen or 9% of our children had had immunizations delayed by medical providers and these delays were well documented in their records. Seventeen or 10% of the children were immunized as possible on the date of the review. Most children in the last category had received their initial immunizations late, thus making every other immunization late. (See Table 1)

Across the State of Tennessee the Immunization Rate for 2 year old children has improved from 57% to 65.5% during the first two years of the Healthy Children Initiative. The 1985 survey results for the Mid-Cumberland Region indicated 64% of our 2 year old children were completely immunized. In order to compare Infant Follow-Up Children to the general population in our Region we analyzed the immunization records for all our children 20-24 months of age. The Infant Follow-Up Children had an immunization rate of 71%. While we had hoped it would be greater it is still 7% higher than the general (See Table 2)

population. It must also be noted, most of our children are less than one year old so to get a large enough population we analyzed children as young as 20 months of age and compared the results to children 24 months of age. Secondly, most of the older children in our Follow-Up Program have been referred to us because problems are known or suspected. Many of the problems stem from family situations which are somewhat less than adequate. At the end of this second year we will be able to make a more statistically sound comparison.

Concerning other areas analyzed during the record review of 177 records, 97% of the children had had appropriate Developmetal Screenings, 94% have had hearing screenings and 95% have had vision screenings. Ninety-eight percent of the children had defined medical homes. For 86% of the children, environmental and social assessments had been performed and were documented, and 98% of the childrn had had the appropriate minimal nurse contacts at 2 weeks, 6, 15 and 21 months. (See Table 3)

This second year we have been awarded more money and have hired 4 additional part-time Infant Follow-Up Nurses. At the end of the first 4 months of this current Fiscal Year we had 890 children actively enrolled in the program and the nurses made 1937 contacts with the babies and their families.

Since July 1 we have initiated a formal referral program with our

Regional Perinatal Center which is located at the Vanderbilt University Hospital. Each week I meet with a nurse clinical specialist and we make rounds to determine new admissions and current status of babies who have been there for a while. Information concerning the baby's diagnosis and prognosis, family situation and demographic information is collected during these rounds and then disseminated to the Infant Follow-Up Nurse who works in the county of the baby's residence. The nurse then contacts the family to provide help and support services as needed. Information is also sent back to the NICU nurses concerning the environment the baby will be in when he comes home. These environmental assessments done in the home are quite beneficial for discharge planning, especially if the baby will be going home requiring oxygen or special equipment. During the period between the baby's birth and his homecomng the Infant Follow-Up nurses help the parents with problems such as transportation. Some families live 100 miles or more from the Perinatal Center. The nurses also assist families in linking with other support systems such as Medicaid or SSI if their infants require special help long term.

Since the program began September 24th we have linked 53 babies and their families with early support and intervention.

During the Summer of 1984 a document called a "Medical Passport" was designed in conjunction with requests from both private and public medical providers. The Medical Passport is a creditcard-sized

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document parents can keep with them to be sure all relevant health information about their child is readily available to various health care providers. The passport has space available for immunizations, physical screenings, important diagnoses or hospitalizations and other data pertinent to the child. When a provider sees a child for the first time there is at least an overview of past medical history. The Medical Passport was piloted in the Mid-Cumberland Region and met with such success it is now in place statewide.

It is our opinion and is now proving to be statistically evident, the Infant Follow-Up Program works. The children have identified medical homes, their immunization rate is better and the Medical communities are pleased. In one county the pediatricians have asked to see all children for Child Health Services except immunizations. They have agreed to accept private pay children, Medicaid children and children from families who can pay very little or perhaps nothing. These pediatricians feel all children need a full-time Medical Home and not fragmented services.

With Infant Follow-Up we are mating children and families with problems to strategies and solutions. We are networking with other government programs, private providers, charitable organizations, parent groups, early childhood stimulation programs and virtually anyone who deals with young children and their families.

THANK YOU

TABLE 1

RECORD REVIEW RESULTS

Immunizations Appropriate for Age	67%	
Immunizations Delayed/Documented	9%	86%
Immunized As Possible	10%	
N = 177		

TABLE 2

State/Region/IFU -Immunization Surveys

	State	Region	IFU
1983	57.0%	53.3%	N/A
1984	62.3%	52.4%	N/A
1985	65.5%	63.6%	71.0%

TABLE 3

RECORD REVIEW RESULTS

Developmental Screenings	97%
Hearing Screenings	94%
Vision Screenings	95%
Medical Home Established	98%
Environmental Assessment	86%
Appropriate Nurse Contacts	98%

N = 177